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MONTANA

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Resources

and

Possibilities

by

Governor Edwin L. Norris

Tour of the Western Governors' Special
November—December, 1911.



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MONTANA.

Bearing greetings and messages of good will from those whom they represent to their Eastern brethren, several of the Western Governors are making a visit to a number of cities in the East, imbued with the hope that a closer relation and a more thorough mutual appreciation may result from the tour.

Incidentally it is hoped that many false impressions may be corrected and that information of value concerning the West may be imparted. We take just pride in the resources and possibilities of that great empire beyond the Mississippi, and in the broad public spirit and progressiveness of the people who inhabit it; and we feel that any movement designed to bring about closer understanding between these two great divisions of our Nation must be of decided benefit.

On the exhibit cars which form a part of our special train will be found tangible evidence of what Western soil, climate and energy will produce. Thus you will be able to get an idea of these resources such as no amount of descriptive writing could possibly give.

If the persistent circulation of incorrect and misleading information concerning a country prevents settlement and development, then Montana, in common with the other States of the West, would today be a wilderness well nigh uninhabited. These misleading reports have had their origin in many sources and are circulated through various mediums. To credulous Eastern ears there have been detailed statements of Western incidents and conditions that have existed only in the imaginative minds of romancers who have never been west of the Mississippi river. Writers whose views were no wider than that framed by the window of a swiftly moving Pullman, and whose information was gathered from hasty conversations with persons loitering at railroad stations, have written volubly of their impressions of the West. Many Westerners in conversation with tourists and in letters to relatives in the East often convey misleading information under the mistaken impression that a "big" story will best serve the purpose. In

short, Western history, conditions, resources, climate and possibilities have been described and elaborated in a manner to adorn the tale rather than to state the exact truth.

ERRONEOUS IMPRESSION—AND FACT.

There are in our own country today countless and otherwise well informed people who honestly believe that Montana consists largely of mountains that are continually snow-covered and ice-bound; and that the population is composed largely of hostile Indians, with here and there a few trappers, miners and cowboys. As a matter of fact, the mountains cover less than one-third of the area of the State, bear upon their surface timber of immense value, contain minerals of fabulous richness, and otherwise serve far-reaching economic and industrial purposes.

The hostile Indians of the past have been succeeded by peaceful government wards assembled on reservations. The trapper disappeared with the coming of the settler, and the cowboy, famed in story and song, is rapidly becoming a tiller of the soil. The history of the growth and development of Montana has been made within the past fifty years.

The placer miners started westward the "star of empire" and were the pioneers of western civilization. They gathered the golden treasures from the sands and laid the foundations for a permanent industrial growth. The lure of the precious metals did not lose its force when the placers were worked out. Quartz mining succeeded, and each year since millions of dollars have been poured into the world's coffers from Montana mines, and many wheels of industry have turned in consequence. Our mines continue to yield up their treasures to man, and future generations too distant to estimate will benefit from their richness.

Next came the cowboys, who were the outriders of Western progress, and with their advent the hostile redmen disappeared, while domestic livestock supplanted the buffaloes. A few of the miners and a larger number of the stockmen early realized the productive qualities of Montana soil and its cultivation was commenced.

The area cultivated has been increased from year to year until today approximately two million acres are in use for agricultural purposes. There are thirty million acres of arable

land as yet untouched by the plow that await only the coming of the farmer to become a part of the world's granary.

Up to a few years ago it was not known that crops could be raised in this semi-arid region without irrigation, and cultivation was carried on with moisture obtained through artificial means. Irrigation has been, and will continue to be, the medium through which the largest possible production per acre will be obtained. It has been demonstrated, however, that the so-called dry lands will yield crops in paying quantities without irrigation when scientifically cultivated. This discovery has added millions of acres to the productive area, and the day is not far distant when the yield of grain on these hitherto-considered waste places of the West will exceed the present production of the Nation.

The productive limitations and possibilities of industrial development in Montana are beyond present estimation. It would be a bold prophet indeed who would attempt to predict all the future holds in store for this most favored section.

A more correct impression can be conveyed by a detailed reference to the area, population, climate, resources and possibilities.

AREA.

Montana extends six hundred miles from east to west and three hundred miles from south to north, comprising an area of 146,000 square miles or 93,000,000 acres. Of this approximately one-third is arable valley and bench lands that will yield abundantly when properly cultivated; one-third is rolling, suitable for the grazing of livestock, and the remaining third is mountainous and valuable for the timber growing thereon and the mineral deposits contained therein.

CLIMATE.

The climate is semi-arid in character and is neither humid in summer nor damp in winter. The summer heat is therefore not oppressive, nor is the winter cold unduly severe. The climate is at all times healthful; such, in truth, as to call forth the highest activity and energy of man. The long days of summer sunshine produce a very rapid growth of plant life. Crops mature in a comparatively short space of time after planting, and the labor used in cultivation is in consequence reduced to the minimum.

Livestock winter well on the ranges, except in places where the snow is unusually heavy, and any losses that may be sustained are due to other causes rather than to the cold. During each winter season thousands of cattle are fattened for beef in open sheds from hay alone, and these sell in the markets upon a parity with Eastern stabled and corn-fed stock. The fattening of cattle in the open during the winter proves conclusively that the cold is not such as to seriously menace the safety and comfort of man.

POPULATION.

The present population of Montana is estimated at about 400,000. Its citizens are gathered from all States and nations, and bring with them to their new homes an energy and intelligence that are in every way beneficial. Coming as they do from the older communities where advantages are limited there is in them an ambition to avail themselves to the fullest of the larger opportunities offered in this new land. The population of Montana is therefore decidedly cosmopolitan in character and as such is best calculated to promote the highest ideas and ambitions known to progressive citizenship.

MINES.

Montana has heretofore been chiefly known as a mining state, and at present the mineral production exceeds that from any other source. Mining, aside from coal, is now confined largely to the metalliferous ores, consisting of gold, silver, lead, copper and zinc. It is not possible to give any estimate of the value of the undeveloped metalliferous ore deposits. The eyes cannot penetrate the depths where these deposits are to be found. Therefore, in order to estimate the future production, some idea may be gained by reference to the past and present output. Since the pioneer came with pick and shovel and pan, Montana has turned into the channels of the world's wealth \$1,494,624,800.00 of mineral products, aside from coal. In 1909 the output of metalliferous ores was valued at \$57,492,806.00; and the output of last year, of which the exact figures have not been received, was about the same. This production was near the normal and judging from the known mineral districts and the development so far made it is confidently predicted that a like annual output will continue for an indefinite period. The opportunities for mining investments

are as extensive and as favorable as at any former period, and those so inclined will find in the mines of Montana favorable opportunities for investment.

COAL MINES.

The coal measures are extensive and the cost of mining is not excessive. The following estimates and comparisons of tonnage made by the geological department of the Federal government are interesting:

STATE.	Area square miles.	Estimated original contents—Short tons.	Total exhaustion—Short tons.	Estimated available supply.—Short tons.
Pennsylvania	14,209	112,574,000,000	3,152,000,000	109,422,000,000
Kentucky	16,670	104,028,000,000	215,000,000	103,813,000,000
Illinois	35,600	240,000,000,000	1,117,000,000	238,883,000,000
Montana	34,067	303,060,000,000	44,000,000	303,016,000,000

It may be assumed that we are not in immediate danger of a fuel shortage.

The coal deposits are widely distributed and favorably located to transportation and place of use. The immense benefits that will come to the State from this vast deposit of coal and the industrial activity that will follow its development cannot be estimated.

At a valuation of \$2.00 per ton and estimating the loss in mining of 25 per cent total, we have values that reach \$450,-000,000,000.00—a sum too enormous for realization.

PHOSPHATES.

Last year an expert of the geological department discovered and estimated a phosphate deposit covering 34,000 acres in southwestern Montana, from six to eight feet in thickness. Phosphate is valuable as a fertilizer, when properly treated, and raw phosphate commands from \$3.50 to \$7.80 per ton. This deposit is 75 per cent pure, and basing an estimate on a thickness of six feet there are 537,000,000 tons of phosphates in this deposit. At \$3.00 per ton the total value of this deposit would be approximately \$1,700,000,000. Other deposits of phosphate are known to exist in the western part of the State, but

as no explorations have been made, no estimate of values will be attempted. In making the finished product sulphuric acid is necessary. This can be obtained at a minimum cost of production from the fumes discharged by a large smelter located about 40 miles from the phosphate beds. It is but reasonable to presume that a great industry will in time be developed for the manufacture of fertilizer, and that worn out soil will be made productive through the aid of this agency.

CEMENT, BUILDING STONE AND LIME.

Large deposits of minerals used in making cement exist in many sections of the State. One cement factory of 1,200-barrel daily capacity is now in operation and all of the output is in demand. Freight rates that must be paid on cement from elsewhere relieve the home plant from serious outside competition. Our massive granite mountains can supply the demands of the world for building stone indefinitely, and limestone quarries may be found almost anywhere within our borders.

OTHER MINERALS.

No specific reference will be made to the many other minerals that are known to exist in the mountains, for the reason that development has not been sufficient to prove their extent. Sufficient is known, however, to safely predict that in time many minerals of value and in large volumes will be mined and great industries will be built up.

LIVESTOCK.

The raising of livestock is an important and profitable industry. For the past two years the number of livestock has been gradually decreased, this due to the appropriation of range lands for agricultural purposes. We are, however, now in the transition stage from the large herds owned by a few persons to the smaller herds that will be owned by a larger number of persons. Until this transition is complete the number of livestock will further decrease, but after that there will be a gradual increase in the number until under the new conditions the sum total will exceed that of the palmy days of the range.

The more than 30,000,000 acres of land that will always be more valuable for grazing than for other purposes will summer-graze cattle, horses and sheep to the number of

millions, and the forage crop, raised by the farmer will serve as food during winter. The grade of stock raised is being improved and the time is not far distant when only blooded stock will be raised. With an abundance of pure water and air, nutritious grasses and forage crops, careful handling and the benefits received from a thorough execution of our most efficient livestock sanitary and inspection laws, Montana is in every way situated to become a leader of the world in the production of high grade stock.

Montana is today and will continue to be a most inviting field for investment in the livestock industry. The element of loss in winter-ranging, heretofore somewhat a factor in the raising of livestock, has been eliminated by winter-feeding. Today investments in the livestock industry are as safe as may be found in any other line. Stock paper is rated in the money markets with real estate securities.

The raising of hogs has not received the attention that the profits from that industry justify. Hogs reared and fed upon alfalfa, that grows so abundantly in Montana, and finished with a month's feeding of grain produce a staple quality of pork, and at a minimum cost.

Eighty per cent of the products consumed are shipped in, and here again the home producer will benefit from the cost of transportation of the outside product. Here is an ample industry awaiting only development to yield satisfactory profits.

POULTRY RAISING AND DAIRYING.

Dairying and poultry raising have so far received but scant attention. Over 80 per cent of the dairy and poultry products consumed by our people are imported. Every condition is favorable for a home production that will equal consumption. The percentage of importations conclusively proves the existence of an every-ready market and the amount of freight and express charges now paid would prove a good profit to the local dairyman and poultryman.

FORESTS.

The forests cover 25,000,000 acres, of which about 18,000,000 acres bear merchantable timber in greater or lesser quantities. No detailed estimate of the merchantable timber has been made, and exact information of the total amount cannot be

given. Montana forests have produced to date \$45,000,000 and the average annual output is valued at \$4,500,000. It is definitely known that about one-eighth of the ripe timber has been exhausted. As the amount so far cut has been sold for \$45,000,000, some idea may be gained of the value of the timber remaining.

ELECTRIC POWER AND WATER.

Montana is very fortunate in the amount of water that rises and flows within her borders. Four large rivers have their source in the Rocky mountains, which traverse the western part of the State. The Missouri and the Yellowstone drain the eastern side of the mountains, while the Kootenai and Clark's Fork of the Columbia drain the western slope. These streams from their source descend from an altitude of 9,000 feet to approximately 1,860 feet.

The falls along their courses offer excellent opportunities for the development of electric power. Government engineers have estimated that electricity in excess of 6,000,000 horse power may be developed within the State. If one-half of this amount is developed and earns an average of \$20 per horse power per year an annual income of \$60,000,000 will be received therefrom. This annual income will be but a small part of the benefits that will accrue from the development of the water power.

With so much raw material at hand and cheap power available manufacturing industries are sure to come and with them a larger population and other commercial enterprises. There has been developed and in process of development over 300,000 horse power which is being or will be conducted to industrial centers. Electric power is sold on an average for one-third of the cost of developing power with coal.

Arrangements are now being made to use electric power to pump water for irrigation purposes. Such employment of electric power initiates an enterprise that is almost limitless in possibilities. To convey a clearer conception as to the extent to which it may be used for this purpose, and the value to follow, attention is called to the following facts: In the flood season, May and June of each year, the Missouri and Yellowstone rivers discharge at the eastern border of the State 20,000,000 acre-feet of water, or a volume that will cover 20,000,000 acres to a depth of one foot. This flood water now

serves no useful purpose whatever; as a matter of fact it materially assists in causing widespread damage in the lower Missouri and Mississippi valleys. Along the courses of these rivers and their tributaries there are places where all the flood waters may be reservoiried and held for useful purposes. This 20,000,000 acre-feet of water will irrigate 12,000,000 acres of land. There is that amount of productive agricultural land that by reason of elevation can never be irrigated without the aid of storage reservoirs and pumping plants.

WHAT IT MEANS.

Basing my statement upon the price for which lands are now being sold in Montana under Government and Carey reclamation projects, \$45.00 per acre can be obtained for the 12,000,000 acres thus reclaimed, or a total sum of \$540,000,000. That sum will reservoir the water, construct the power plants to furnish the power and build the pumping plants and ditches necessary to convey the water to the land. This reclaimed land can be sold to actual settlers for the sum named and the cost of reclamation repaid.

It is not intended to convey the idea that all this can be accomplished in any short space of time, but the opinion is expressed that it can and will be ultimately done. Extended as such a gigantic undertaking would necessarily be over a long period of time, an advance of more than one-half of the total cost would not be necessary, for as each unit was completed the land would be settled and repayment of the cost of reclamation commenced. Thus the money could be used again and again and in the end repaid. Only the Government could finance an enterprise of this kind, and it is possible that this may be brought about.

The Pathfinder reservoir of Wyoming, constructed at a cost of \$4,000,000, will store all the flood waters that may run into it. According to statements of the United States Reclamation Service the Rio Grande reservoir of Colorado, which cost \$7,200,000, will absolutely control a flood equal to the worst ever known on the Rio Grande river. The cost in each of the instances named is repaid by settlers on the lands reclaimed by water impounded in the reservoirs. What has been done in Wyoming and Colorado can be accomplished in the Missouri and Yellowstone basins.

FLOOD PREVENTION.

There is another useful purpose that the storing of flood waters will serve. The Missouri river is the largest tributary of the Mississippi and drains 60 per cent of its drainage basin. The Missouri discharges its highest flood into the Mississippi usually during the month of June and before the floods from the other tributaries have subsided. Hence it is the Missouri flood that usually causes the heaviest damage in the lower Mississippi valley. To prevent destructive flooding in this valley, levees costly to construct and maintain are required.

In addition to this cost and far larger in amount is the damage caused by the floods. If the flood waters of the Missouri river were reservoired, the flooding of the lower Mississippi valley would cease. The actual damage from floods up to the present time and the cost of constructing and maintaining levees have reached an amount far in excess of the cost of impounding all the flood waters of the Missouri. This is a great economic question that affects the interest of the people of the west and equally as much those who reside in the lower Missouri and Mississippi valleys. Aside from our interest in the welfare of those residing elsewhere we are more directly concerned in securing the beneficial use of these wasted flood waters, while those who reside in the flooded districts are chiefly concerned in preventing the destruction of their property. With this common interest the Western and Southern people have a basis and a reason for co-operation towards bringing about the storing of the flood waters of the Missouri.

LAND.

Land is the one enduring resource that yields its returns yearly if properly used, and is the basis of the comfort, happiness and prosperity of mankind. Montana has 31,000,000 acres of arable land, of which the larger portion is rich and is or can be made productive for agricultural purposes.

Until recently Montana has not been generally known as an agricultural State. Some of the wiser citizens years ago realized the possibilities in this region and have grown rich in consequence. Today Montana has every prospect of becoming one of the leading agricultural States of the Nation.

At the present time about 2,000,000 acres of land are cultivated, of which 1,700,000 acres are irrigated. Government,

Carey and private reclamation projects are in various stages of progress, which will add 1,500,000 acres to the irrigated total. There is an available water supply for an additional 4,000,000 acres that can be irrigated at reasonable cost. It is reasonably certain that in round numbers 7,000,000 acres will in time be watered. This amount is exclusive of the 12,000,000 acres heretofore referred to for the irrigation of which the reservoiring of the flood waters of the Missouri and Yellowstone rivers and the construction of power and pumping plants will be necessary. In any event there are 12,000,000 and possibly 24,000,000 acres of land that cannot be irrigated. This, however, is not land that is incapable of remunerative cultivation. The largest portion can be successfully tilled by the so-called dry farming method, and made to yield satisfactory returns. All of this land is rich in the elements that support plant life and sufficient moisture can be stored in the soil by proper cultivation to raise crops.

All crops that grow in the northern half of the United States are produced in Montana. Altitude and temperature are factors in determining the variety of crops that can be most successfully cultivated in the different sections. Wheat, oats, barley, rye, alfalfa, clover, alsike, and other forage crops do well in nearly every section of the State. In the lower altitudes corn is successfully grown, while in the higher places hay is most profitable.

Horticulture is extensively engaged in, in that portion west of the Rockies and in many portions of the valleys of the Missouri and Yellowstone rivers and their tributaries. The area known to be suited to this purpose comprises more than a million acres.

Flax is cultivated extensively and flourishes with a minimum amount of moisture and cultivation.

Sugar beets are now being grown at a handsome profit in the Yellowstone valley, and tests made in several other valleys prove that there are lands in the State on which sugar beets may be grown sufficient to tax the capacity of a dozen factories.

Judging from the abundance of the yield it might be surmised that the Irish potato had its origin in Montana. Nearly all of the vegetables and many kinds of small fruits and berries

grow over extensive areas, and all the vegetables, small fruits and berries grow in many sections.

PRODUCTION STATISTICS.

An accurate idea of the productive qualities of Montana soil can be conveyed and comparison made with the average for the United States of like crops, by quoting from the Government reports of production for the year 1911:

	Production, 1911.	Average yield per acre, 1911.	
		United States.	Montana.
Wheat, bushels	16,919,000	14.5	31.7
Oats, bushels	19,090,000	24.8	49.2
Barley, bushels	1,939,000	20.7	36.5
Hay, tons	1,224,000	1.09*	2.0

* Preliminary estimate of yield for 1911, from October Crop Reporter, issued by United States Department of Agriculture.

The sum totals of acreage and production have been set forth and no distinction has been made as between irrigated and dry farmed crops. Note should be taken of the fact that irrigated lands produce on an average twice as much as those that are dry farmed. Hence, taking wheat for an illustration, the average for irrigated lands was probably about 40 bushels per acre and for dry farmed lands 20 bushels per acre. Attention is called to the further fact that the average for all lands cultivated to a given crop has been quoted and not the highest production. Any number of instances of phenomenal yields might be mentioned, but the averages quoted show the high productive qualities of Montana soil. The amount per acre differs materially with conditions and the care used in cultivation. The higher productions show, however, how much can be grown on Montana soil under favorable conditions and by good farming. The variety and abundance of production is a most agreeable subject, but a desire to touch upon other things prevents further reference.

A few words with regard to the quality of the produce raised. The high quality of our agricultural and horticultural products is our special pride. Mr. J. J. Hill, than whom there is no abler judge, and other experts have repeatedly said that the quality of Montana agricultural and horticultural products cannot be excelled. The correctness of their judgment has been proven and our pride justified at every fair and land show

where our products have come into competition with those of other sections. At the great land show recently held at New York City Montana received first prizes for wheat, oats, barley and alfalfa. A statement of results at other contests would be but a repetition of the story.

COMPARATIVE FIGURES.

A comparison of the production in leading crops this year with that of 1900 shows a very gratifying increase:

	Total Production.	
	1900.	1911.
Wheat, bushels	1,929,963	16,919,000
Oats, bushels	2,568,735	19,090,000
Barley, bushels	201,527	1,939,000
Hay, tons	590,658	1,224,000

Flattering as this increase in eleven years is, it may be truthfully said that agricultural Montana is just commencing to grow. Not over 7 per cent of the agricultural and horticultural resources are being utilized, and not 10 per cent of her resources have been or are now being developed. This year our production from the mines, forests, ranges and soil will exceed \$150,000,000.00, and the time is not very remote when the total will be many times this amount.

Opportunities in Montana are just as favorable at the present as at any time in the past. The "good old days of the past" are gone, but far better ones are at hand. Five trans-continental railway lines penetrate the State, and more miles of railroad are now planned for Montana—to be built when money is available for investment in railway securities—than in any other State. Every important productive center will in time be touched and transportation to markets afforded.

Property in general can be purchased at reasonable prices and lands acquired under favorable terms. The breaking up of large ranches and the sale of privately-owned grazing lands offer opportunities for investment. Lands on the Government and Carey reclamation projects may be acquired on favorable terms. From time to time the State sells parts of its land grant holdings and payments are extended over a period of twenty years. There is a large area of the public domain that may be entered under the homestead and desert land laws.

My detailed reference to the variety and volume of resources and the statement that 90 per cent are undeveloped seem sufficient to show that Montana offers unusual opportunities to the investor and home builder. Our citizens are as progressive, moral, intelligent and law abiding as are those elsewhere. Churches, hospitals and charitable institutions are well supported. Educational advantages are amply provided for in a

splendid system of public schools, high schools and institutions of higher learning. Health and sanitation laws have been enacted and are rigidly enforced. Every form of stock inspection and sanitation to prevent and cure diseases of livestock and to secure healthful production is provided for. Horticultural inspection to eradicate fruit pests is maintained. Through the aid of an experiment station, two sub-stations, twenty demonstration farms and 100 sessions of the farmers' institute the farmers, orchardists and stockmen are instructed in the best methods to attain success. In fact everything that our people have found necessary for their comfort, prosperity and progress has been initiated.

WHAT MONTANA NEEDS—AND GIVES.

We need people and we need capital. Montana accords fair and just treatment to capital and also requires that capital accord a like fair and just treatment to her citizens. Our laws, made by a practical and commonsense people, are progressive, not oppressive. New problems receive prompt attention and intelligent solution. The capitalist who would be satisfied with just treatment and fair profits need not hesitate to make investment in Montana, but those who will not be so satisfied or inclined may seek other fields. The people of the State are liberal rather than grasping or penurious. The foundation of our civilization was laid by the pioneers who were trained in the broad schools of the mines and ranches. On this stock may be safely grafted that schooled in the frugal and conservative habits of the East. We have opportunities in abundance, but benefits from them can be reaped only by energetic and intelligent effort. We welcome the genuine homebuilder or investor, but have neither place nor use for the incompetent or those who prey upon honest effort. The breaking of old ties and the seeking of a home in a new land is a matter of importance, and merits careful consideration.

I realize that many glowing prospects are pictured in the attractively written and beautifully illustrated literature that is circulated concerning the advantages of various communities. We merely ask that you carefully investigate; or, better still, come and see what Montana has to offer. A fair sample of what we produce may be seen on an exhibit car attached to the Governor's Special, and an invitation to inspect what there may be seen is extended. Bear this important fact in mind; that while energy and intelligence may accomplish much, some money with which to commence building a home or to engage in any business is a very necessary possession in any new location.

